

REMARKS

Upon entry of this amendment, claims 1, 4, 5, 7-10, and 25 are pending in this application.

102 Rejections

Claim 25 is rejected under 35 USC 102(b) as being anticipated by Miesel (US Pat 6,248,080). Applicants respectfully traverse this rejection.

Response:

Claim 25 recites a plurality of leads, a plurality of tissue-interactive elements associated with the plurality of leads, and a satellite control module coupled between the plurality of leads and the distal end portion of the elongated conductor, the satellite control module configured to generate and selectively route electrical signals to selected ones of the plurality of tissue-interactive elements in accordance with the programming signals received from the remote programmer. Applicants assert that Miesel fails to disclose at least these recitations.

Initially, Applicants note that claim 25 recites that the satellite control module is configured to generate and selectively route electrical signals to selected ones of the plurality of tissue-interactive elements in accordance with programming signals received from the remote programmer, where the tissue-interactive elements are associated with the plurality of leads. The Office Action equates the sensor module 20 of Miesel with the satellite control module. However, the sensor module 20 of Miesel does not selectively route electrical signals to selected ones of the plurality of tissue interactive elements associated with the plurality of leads. The module 100 provides a source voltage VDD to the sensor via conductor 14, and the sensor module 20 internally powers the sensing components while a related sensor signal is returned via the conductor 16. There is no routing of electrical signals to a plurality of selected tissue-interactive elements associated with a plurality of leads that are selected on the basis of programming signals by a single sensor module 20.

Miesel discloses the lead 12 as including two conductors 14 and 16. These conductors interconnect the module 100 with the sensor module 20. To the extent lead 12 is the

conductor of claim 25, then there would be no tissue interactive elements associated with a plurality of leads since there is no plurality of leads. To the extent one of the conductors 14 or 16 is considered the conductor of claim 25, then that leaves only the other conductor 14 or 16 to account for the plurality of leads to be associated with the tissue-interactive elements from which the satellite module should select. However, there is no plurality of leads where there is only one conductor. Accordingly Miesel fails to account for the satellite module selectively routing electrical signals to selected ones of the plurality of tissue interactive elements that are associated with a plurality of leads.

Thus, as Miesel fails to account for the plurality of leads as well as selectively routing electrical signals to tissue-interactive elements associated with the plurality of leads, claim 25 is allowable over Miesel for at least these reasons.

102/103 Rejections

Stypulkowski

Claims 1, 8-10 and 25 are rejected under 35 USC 102(e) as being anticipated by US. Pat 7,286,878 to Stypulkowski, or in the alternative, under 35 USC 103(a) as being obvious over Stypulkowski. Claims 4, 5, and 7 are rejected under 35 USC 103(a) as being obvious over Stypulkowski. Applicants respectfully traverse these rejections.

Response:

Claim 1

Claim 1 recites a system that comprises, among other things, a satellite module adapted for subcutaneous implantation coupled to said central control module by means of said first lead. Claim 1 further recites that the satellite module comprises, among other things, a processor coupled to said wireless receiver and configured to be coupled to the power source; ...a switching module coupled to said processor; ... a signal generator coupled to the switching module; ...wherein said processor is configured to receive said programming signals from said wireless receiver, to control the signal generator to generate stimulation signals, and to control said switching module to selectively distribute the generated stimulation signals or receive sensed signals to or from the plurality of second leads.

Stypulkowski fails to disclose such recitations and furthermore, such recitations are not obvious over Stypulkowski.

The Office Action contends that Stypulkowski includes a signal generator because a battery 326 is present in the EU 226 where that battery produces a voltage or signal. However, claim 1 does not merely recite the presence of a signal generator, but recites that the signal generator is controlled by the processor to generate stimulation signals that are distributed to the plurality of second leads. The battery 326 is not controlled by the processor to produce any signal, and for that matter, there is no signal produced by the battery 326 that is distributed to a plurality of second leads. Therefore, the battery 326 cannot be the signal generator of claim 1. Claim 1 is allowable over Stypulkowski for at least these reasons.

Dependent claims 4, 5, and 7-10 depend from an allowable base claim and are also allowable for at least the same reasons. Furthermore, one or more of these claims is allowable for additional reasons. For instance, claim 4 recites wherein the central control module further includes a communication module coupled to the power source and the satellite module wherein communication between the central control module and the satellite module is combined with power delivery to minimize interconnections. The Office Action refers to wireless transmission of power when rejecting claim 4. Applicants note that there are no recitations of claim 4 to wireless transmission of power such that this rejection is unclear. Furthermore, Applicants contend that Stypulkowski does not combine communication and power delivery between the IPG 220 and the EU 226 such that claim 4 is allowable for this additional reason.

Claim 25

Claim 25 recites the satellite control module configured to generate and selectively route electrical signals to selected ones of the plurality of tissue-interactive elements in accordance with the programming signals received from the remote programmer. Applicants assert that Stypulkowski also fails to disclose these recitations and furthermore, such recitations are not obvious over Stypulkowski.

As claim 25 recites that the satellite control module is configured to generate electrical signals to selected ones of the plurality of tissue-interactive elements in accordance with

programming signals received from the remote programmer, Applicants assert that Stypulkowski fails to disclose such recitations because there is nothing performing signal generation in the EU 226. The battery 326 of the EU 226 is not a signal generator as claimed at least because the voltage, or electrical signals as equated by the Office Action, being generated by the battery 326 are not being selectively routed to selected ones of the plurality of tissue-interactive elements. The wave shaping circuits shape the stimulation signals from the IPG 220, not from any voltage being output by the battery 326. To the extent Stypulkowski discloses the battery 326 powers the switches, this is also not a signal being routed to selected ones of the plurality of tissue-interactive elements because the switches do not route the power from the battery but route the signals from the wave shaping circuits to the leads.

Thus, as Stypulkowski fails to disclose all of the recitations of claim 25, claim 25 is allowable over Stypulkowski for at least these reasons.

Gord

Claims 1, 4-5, 8-10 and 25 are rejected under 35 USC 102(e) as being anticipated by US. Pat 7,286,878 to Gord, or in the alternative, under 35 USC 103(a) as being obvious over Gord. Claim 7 is rejected under 35 USC 103(a) as being obvious over Gord. Applicants respectfully traverse these rejections.

Response:

Claim 1

Claim 1 recites a switching module coupled to said processor...a signal generator coupled to the switching module...wherein said processor is configured to receive said programming signals from said wireless receiver, to control the signal generator to generate stimulation signals, and to control said switching module to selectively distribute the generated stimulation signals or receive sensed signals to or from the plurality of second leads. Applicants assert that Gord fails to disclose these recitations and furthermore, such recitations are not obvious over Gord.

Applicants note that the stimulator 86 of the stimulator module is not disclosed as having any ability to do switching between the electrodes 82 and/or 83. Furthermore, there is no disclosure of a processor configured to control a switching module to selectively distribute generated stimulation signals. The stimulator 86 receives an output directly from the state machine which triggers a stimulation pulse. There is no disclosure that the state machine provides any selection to the stimulator 86 regarding whether to stimulate via electrode 82 and/or 83. As stated at col. 15, lines 32-35, the state machine causes a specific sensor to be sampled or a stimulation pulse to be generated. The state machine uses multiplexers to allow communication with specific sensors, but there is no switching element between the state machine and the stimulator 86 and there is no disclosure of a selection of electrode 82, 83 by the state machine to the stimulator 86. Thus, even if the stimulator 86 were to have an inherent switching ability, Gord still fails to disclose the processor being configured to control said switching module to selectively distribute the generated stimulation signals. Claim 1 is allowable over Gord for at least these reasons.

Additionally, Applicants assert that the phrase “electrodes 82 and/or 83” does not inherently mean that the stimulator 86 has a switching function. That which is inherent must necessarily flow from the disclosure. Applicants assert that a switching capability does not necessarily flow from Gord. The phrase “electrodes 82 and/or 83” may refer to the idea that only one electrode 82 may be connected, that only one electrode 83 may be connected, or that both electrodes 82 and 83 may be connected to the stimulator 86. The specification of Gord supports this interpretation. At col. 15, line 53, Gord states that the inclusion of electrodes 82 and/or 83 is optional. Thus, Gord explicitly states that they are an option and does so using the same phrasing, “electrodes 82 and/or 83” as when describing the function of the stimulator 86.

Thus, Applicants assert that it is not inherent that the stimulator 86 has a switching capability and that it is just as likely that the stimulator 86 provides the stimulation pulse to whatever it is connected to, either electrode 82 and/or 83. Thus, Applicants assert that Gord fails to disclose a switching module such that claim 1 is allowable over Gord for at least this additional reason.

Applicants also note that the conductors 14' and 16' carry power and data from the controller, and further, that conductors 14'' and 16'' also carry power and data from the controller to the next sensor/stimulator module in the daisy chain, as shown in FIG. 5A and 5B. Thus, none of these conductors 14', 16', 14'', and 16'' are leads that carry stimulation signals from the sensor/stimulator module.

Dependent claims 4-5, 7-10, and 25 depend from an allowable base claim and are also allowable for at least the same reasons discussed above.

Claim 25

Claim 25 recites a satellite control module coupled between the plurality of leads and the distal end portion of the elongated conductor, the satellite control module configured to generate and selectively route electrical signals to selected ones of the plurality of tissue-interactive elements in accordance with the programming signals received from the remote programmer. Applicants assert that Gord fails to disclose all of these recitations and furthermore, such recitations are not obvious over Gord.

The sensor/stimulator module of Gord includes a stimulator 86 triggered by the state machine. However, Applicants assert that there is no routing of electrical signals to selected ones of a plurality of tissue-interactive elements in accordance with programming signals. As discussed above in relation to claim 1, the stimulator 86 does not receive any selection from the state machine for providing the stimulation for electrode 82 versus electrode 83. Therefore, Gord fails to disclose routing to tissue-interactive elements in accordance with programming signals and claim 25 is allowable over Gord for at least these reasons.

Furthermore, as is also discussed above in relation to claim 1, there is no switching capability disclosed for the stimulator 86 and a switching capability is not inherent since Gord indicates that inclusion of electrode 82 and/or 83 is optional, such that it is reasonable to conclude that the stimulator 86 provides stimulation to whatever is connected to it, electrode 82 and/or electrode 83, without performing a selection via a switching function. Therefore, claim 25 is allowable over Gord for at least these additional reasons.

Conclusion

In view of the foregoing amendments, Applicants respectfully request reconsideration and allowance of the claims as all rejections have been overcome. Early notice of allowability is kindly requested.

The Examiner is respectfully requested to contact the undersigned by telephone at 678.565.4748 with any questions or comments.

While no fees are believed due, please grant any extension of time, if necessary for entry of this paper, and charge any fee due for such extension or any other fee required in connection with this paper to Deposit Account No. 13-2546.

Respectfully submitted,

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